

METHODS AND APPARATUS FOR MANAGING THE ARRANGEMENT  
OF NODES IN A NETWORK

ABSTRACT OF THE DISCLOSURE

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The invention is directed to techniques for managing a network of nodes by automatically configuring the arrangement of nodes in the network. A network manager in a node selects a group of nodes and compares network metrics for each node in the group, such as a bottleneck bandwidth measurement from each node to a root node of the network. The network manager selects a target node using the network metrics. 10 Optionally, the network manager can select a new group of nodes using the target node, compare network metrics for the new group, and optionally select a new target node. If the node is a newly connecting node to the network, the network manager can repeat this process of selecting new groups until establishing a relationship with a target node that is not a root node (e.g., with performance that is the same, or about the same, as the root 15 node), because the goal is not to overload the root node with too many relationships. If the node is a node with an established relationship to the network that is trying to reconnect to a new target node, the network manager can repeat the process of selecting new groups until establishing a relationship with a new target node that provides 20 improved performance than the previous target node, but is, preferably, not the root node.